



Photometric Indoor Test Report

Relevant Standards

IES LM-9-2009, IES LM-41-1998 (Withdrawn)
ANSI C78.81-2010, ANSI C82.1-2004, ANSI C82.11, ANSI C82.2, ANSI C82.77
IEC 60081, IEC 60901, IEC 61347-2-3

Prepared For

Precision Architectural Lighting, Inc.

Fred Compton

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Houston, TX 77017

Catalog Number

DRS01-X-4-X-D28R1/MPL-X-120-T5

LTL Test Number

24017

Test Date

2011-07-02

Prepared By

Eric Gaudreau, Technician III

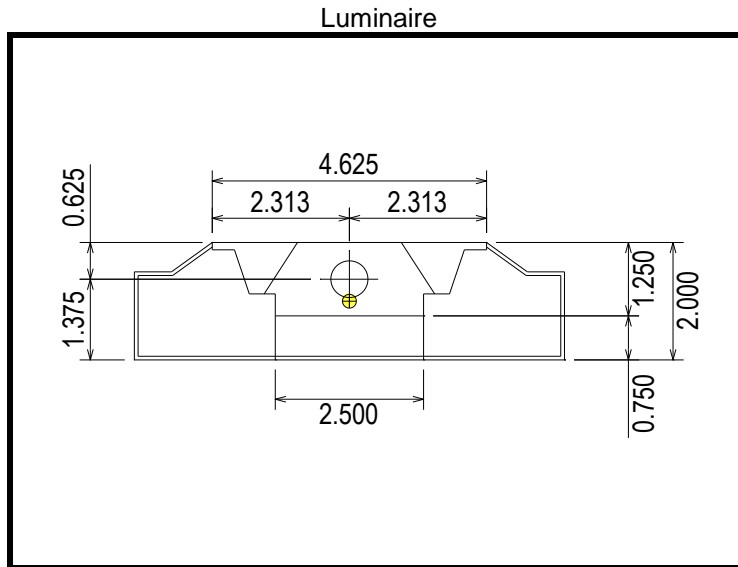
Approved By

Zachary Mooney, Project Coordinator

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Extruded aluminum housing, formed white enamel aluminum side reflectors, formed white enamel slotted aluminum upper reflector, clear prismatic plastic lower lens
Catalog Number: DRS01-X-4-X-D28R1/MPL-X-120-T5
Lamp: One 28 watt T5 linear fluorescent lamp rated at 2610 lumens
Lamp Catalog Number: Philips F28T5/841/ALTO
Mounting: Pendant
Ballast/Driver: One Ultra Save ER235120MHT



Zonal Lumen Summary

Table with 4 columns: Zone (Degrees), Lumens, % of Lamp, % of Luminaire. Rows include zones 0-30, 0-40, 0-60, 0-90, 90-180, and 0-180.

Test Conditions

Test Temperature: 24.6 °C
Voltage: 120.0 VAC
Current: 0.2908 A
Power: 34.72 W
Power Factor: 0.995
Frequency: 60 Hz

Summary of Results

Luminaire Efficiency: 69.5 %

Spacing Criterion: 0 Degree: 1.24 90 Degree: 1.28
180 Degree: 1.24 270 Degree: 1.28

CIE Type: Semi-Direct



Candela Tabulation
Horizontal Angle (Degrees)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0	724.0
5	721.6	723.3	725.5	721.3	722.9	721.3	725.5	723.3	721.6	723.3	725.5	721.3	722.9	721.3	725.5	723.3
10	715.9	718.6	721.8	719.1	723.6	719.1	721.8	718.6	715.9	718.6	721.8	719.1	723.6	719.1	721.8	718.6
15	701.6	706.1	713.0	714.5	719.5	714.5	713.0	706.1	701.6	706.1	713.0	714.5	719.5	714.5	713.0	706.1
20	677.3	682.6	695.9	702.1	706.7	702.1	695.9	682.6	677.3	682.6	695.9	702.1	706.7	702.1	695.9	682.6
25	644.5	651.6	670.1	670.3	670.8	670.3	670.1	651.6	644.5	651.6	670.1	670.3	670.8	670.3	670.1	651.6
30	603.2	615.4	627.1	626.2	627.2	626.2	627.1	615.4	603.2	615.4	627.1	626.2	627.2	626.2	627.1	615.4
35	552.1	565.6	572.6	574.9	580.6	574.9	572.6	565.6	552.1	565.6	572.6	574.9	580.6	574.9	572.6	565.6
40	480.0	489.6	502.1	505.9	511.1	505.9	502.1	489.6	480.0	489.6	502.1	505.9	511.1	505.9	502.1	489.6
45	357.6	354.2	352.7	340.9	338.4	340.9	352.7	354.2	357.6	354.2	352.7	340.9	338.4	340.9	352.7	354.2
50	224.0	213.1	216.7	213.8	209.4	213.8	216.7	213.1	224.0	213.1	216.7	213.8	209.4	213.8	216.7	213.1
55	149.4	145.5	138.8	135.4	141.2	135.4	138.8	145.5	149.4	145.5	138.8	135.4	141.2	135.4	138.8	145.5
60	97.6	100.2	97.0	92.9	98.5	92.9	97.0	100.2	97.6	100.2	97.0	92.9	98.5	92.9	97.0	100.2
65	69.6	75.5	72.9	68.4	68.5	68.4	72.9	75.5	69.6	75.5	72.9	68.4	68.5	68.4	72.9	75.5
70	55.8	59.2	53.9	50.0	53.2	50.0	53.9	59.2	55.8	59.2	53.9	50.0	53.2	50.0	53.9	59.2
75	42.5	45.7	41.6	37.3	38.1	37.3	41.6	45.7	42.5	45.7	41.6	37.3	38.1	37.3	41.6	45.7
80	37.3	31.7	29.9	27.3	25.6	27.3	29.9	31.7	37.3	31.7	29.9	27.3	25.6	27.3	29.9	31.7
85	20.7	18.6	16.4	14.4	12.2	14.4	16.4	18.6	20.7	18.6	16.4	14.4	12.2	14.4	16.4	18.6
90	0.4	0.9	0.6	0.3	0.0	0.3	0.6	0.9	0.4	0.9	0.6	0.3	0.0	0.3	0.6	0.9
95	6.5	7.1	7.0	5.5	4.9	5.5	7.0	7.1	6.5	7.1	7.0	5.5	4.9	5.5	7.0	7.1
100	15.3	15.0	15.3	14.0	13.2	14.0	15.3	15.0	15.3	15.0	15.3	14.0	13.2	14.0	15.3	15.0
105	25.0	22.9	22.4	21.7	21.2	21.7	22.4	22.9	25.0	22.9	22.4	21.7	21.2	21.7	22.4	22.9
110	34.7	33.2	28.2	28.2	27.9	28.2	28.2	33.2	34.7	33.2	28.2	28.2	27.9	28.2	28.2	33.2
115	46.8	46.3	36.3	33.3	32.5	33.3	36.3	46.3	46.8	46.3	36.3	33.3	32.5	33.3	36.3	46.3
120	58.5	58.9	47.0	40.6	38.5	40.6	47.0	58.9	58.5	58.9	47.0	40.6	38.5	40.6	47.0	58.9
125	68.1	71.1	59.1	51.3	48.1	51.3	59.1	71.1	68.1	71.1	59.1	51.3	48.1	51.3	59.1	71.1
130	78.6	82.6	73.5	63.7	61.0	63.7	73.5	82.6	78.6	82.6	73.5	63.7	61.0	63.7	73.5	82.6
135	88.3	91.6	85.9	77.7	74.4	77.7	85.9	91.6	88.3	91.6	85.9	77.7	74.4	77.7	85.9	91.6
140	98.3	99.7	96.6	90.7	86.8	90.7	96.6	99.7	98.3	99.7	96.6	90.7	86.8	90.7	96.6	99.7
145	105.5	106.7	105.6	100.4	97.3	100.4	105.6	106.7	105.5	106.7	105.6	100.4	97.3	100.4	105.6	106.7
150	111.8	112.7	111.1	108.9	106.7	108.9	111.1	112.7	111.8	112.7	111.1	108.9	106.7	108.9	111.1	112.7
155	116.6	117.4	115.5	114.1	113.6	114.1	115.5	117.4	116.6	117.4	115.5	114.1	113.6	114.1	115.5	117.4
160	119.4	120.3	119.8	117.4	116.9	117.4	119.8	120.3	119.4	120.3	119.8	117.4	116.9	117.4	119.8	120.3
165	121.9	121.9	121.9	120.1	119.4	120.1	121.9	121.9	121.9	121.9	121.9	120.1	119.4	120.1	121.9	121.9
170	121.2	120.6	120.7	120.0	120.1	120.0	120.7	120.6	121.2	120.6	120.7	120.0	120.1	120.0	120.7	120.6
175	116.4	115.9	116.0	115.3	115.3	115.3	116.0	115.9	116.4	115.9	116.0	115.3	115.3	115.3	116.0	115.9
180	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9	113.9

Zonal Lumen Tabulation (5 degree zones)

Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens	Zone (Degrees)	Lumens
0-5	17.3	45-50	109.8	90-95	1.6	135-140	33.1
5-10	51.6	50-55	76.2	95-100	5.7	140-145	33.1
10-15	84.9	55-60	53.9	100-105	9.9	145-150	31.5
15-20	115.8	60-65	40.6	105-110	13.8	150-155	28.7
20-25	142.3	65-70	31.4	110-115	17.4	155-160	24.6
25-30	162.5	70-75	25.0	115-120	21.3	160-165	19.8
30-35	175.5	75-80	19.0	120-125	25.0	165-170	14.4
35-40	179.1	80-85	12.8	125-130	28.7	170-175	8.5
40-45	159.9	85-90	4.0	130-135	31.6	175-180	2.7



Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%												
Ceiling Cavity Reflectance	90				80				70			
Wall Reflectance	70	50	30	10	70	50	30	10	70	50	30	10
Room Cavity Ratio (RCR)												
0	0.8306	0.8306	0.8306	0.8306	0.7948	0.7948	0.7948	0.7948	0.7607	0.7607	0.7607	0.7607
1	0.7709	0.7401	0.7127	0.6881	0.7374	0.7103	0.6859	0.6640	0.7056	0.6818	0.6603	0.6407
2	0.7129	0.6598	0.6164	0.5802	0.6818	0.6347	0.5957	0.5629	0.6523	0.6106	0.5757	0.5461
3	0.6592	0.5908	0.5387	0.4976	0.6303	0.5694	0.5222	0.4846	0.6031	0.5488	0.5062	0.4718
4	0.6101	0.5316	0.4750	0.4324	0.5836	0.5132	0.4617	0.4223	0.5586	0.4955	0.4486	0.4123
5	0.5655	0.4806	0.4223	0.3798	0.5413	0.4647	0.4112	0.3717	0.5184	0.4494	0.4004	0.3637
6	0.5253	0.4366	0.3782	0.3368	0.5031	0.4228	0.3689	0.3302	0.4822	0.4095	0.3598	0.3236
7	0.4890	0.3984	0.3409	0.3011	0.4687	0.3864	0.3330	0.2956	0.4496	0.3747	0.3252	0.2901
8	0.4563	0.3652	0.3091	0.2710	0.4378	0.3546	0.3023	0.2663	0.4203	0.3443	0.2956	0.2617
9	0.4270	0.3362	0.2818	0.2454	0.4100	0.3268	0.2758	0.2414	0.3940	0.3177	0.2700	0.2374
10	0.4005	0.3107	0.2581	0.2235	0.3849	0.3023	0.2529	0.2200	0.3702	0.2942	0.2478	0.2166

Ceiling Cavity Reflectance	50				30			10			0
Wall Reflectance	70	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)											
0	0.6970	0.6970	0.6970	0.6970	0.6387	0.6387	0.6387	0.5851	0.5851	0.5851	0.5600
1	0.6467	0.6284	0.6117	0.5964	0.5794	0.5666	0.5548	0.5341	0.5246	0.5156	0.4933
2	0.5978	0.5653	0.5376	0.5136	0.5236	0.5018	0.4826	0.4850	0.4681	0.4530	0.4326
3	0.5530	0.5101	0.4755	0.4470	0.4743	0.4465	0.4231	0.4411	0.4189	0.4000	0.3810
4	0.5127	0.4622	0.4234	0.3928	0.4312	0.3995	0.3738	0.4024	0.3766	0.3553	0.3377
5	0.4764	0.4206	0.3795	0.3480	0.3937	0.3594	0.3326	0.3685	0.3403	0.3175	0.3011
6	0.4438	0.3843	0.3421	0.3107	0.3607	0.3251	0.2979	0.3387	0.3088	0.2854	0.2701
7	0.4145	0.3525	0.3101	0.2792	0.3318	0.2955	0.2685	0.3123	0.2815	0.2580	0.2436
8	0.3881	0.3247	0.2825	0.2524	0.3063	0.2699	0.2433	0.2890	0.2578	0.2344	0.2209
9	0.3644	0.3003	0.2587	0.2295	0.2839	0.2477	0.2217	0.2684	0.2370	0.2140	0.2013
10	0.3431	0.2786	0.2379	0.2097	0.2640	0.2282	0.2029	0.2501	0.2188	0.1962	0.1843

Average Luminance Table (cd/m²)

		Horizontal Angle (Degrees)		
		0	45	90
Vertical Angle (Degree)	0	10170	10170	10170
	45	7107	7008	6724
	55	3659	3400	3459
	65	2315	2424	2277
	75	2306	2260	2069
	85	3333	2641	1973

This test was conducted using photometry techniques according to standard IES procedures. The user must therefore use caution in the following situations: 1) This test was performed using a specific ballast/lamp combination. Extrapolation of this data for other ballast/lamp combinations may produce erroneous results. 2) According to IESNA procedures, the ballast(s) and lamp(s) are presumed to produce 100% of rated output. An appropriate ballast factor must be applied to the lumen output ratings and luminous intensity values given. This test was conducted in a controlled laboratory environment where the ambient temperature was held at 25°C ±1°C. Field performance may differ particularly in regards to change in luminous output as a result of difference in ambient temperature and method of mounting the luminaire.



Polar Plot (Candela)

